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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,774	11/09/2001	Ting Wang	RID 01058 (03259-00018)	9156
7590	04/14/2006		EXAMINER	
Martha Ann Finnegan, Esq. Chief Intellectual Property Counsel Cabot Corporation 157 Concord Road Billerica, MA 01821-7001			JOHNSON, JERROLD D	
			ART UNIT	PAPER NUMBER
			3728	
DATE MAILED: 04/14/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

8P

<b>Office Action Summary</b>	Application No. 10/039,774	Applicant(s) WANG ET AL.	
	Examiner Jerrold Johnson	Art Unit 3728	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-33 is/are pending in the application.  
 4a) Of the above claim(s) 9-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>16 DEC 2005</u> | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election with traverse of claims 1-8 is acknowledged. The traversal is on the ground(s) that the subject matter of claims 1-8, drawn to a bale of elastomer composite having certain characteristics, is seen to be sufficiently closely related to the subject matter of claims 9-33, drawn to a method of making a bale of elastomer composite. This is not found persuasive because of the divergent searches required.

The requirement is still deemed proper and is therefore made FINAL.

A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mabry 6,040,364.

Mabry was the basis for the rejections of claims 1-8 in the previous Office Action dated 08 November 2005.

Mabry, assigned to the same assignee as the present application, was asserted by the Examiner to disclose the claimed process steps of producing the masterbatch as is set forth in the product-by-process claim 1, as well as the bale comprised of pieces of elastomer composite comprising an elastomer and filler that result from the process steps.

It is noted that Applicant has argued that Mabry does not disclose the process set forth in claim 1. However, no step in the process set forth in claim 1 has been identified as being absent in Mabry. Accordingly, this argument is unsubstantiated and is unpersuasive.

As was previously submitted by the Examiner in that Office Action, Mabry does not explicitly disclose the void volume of the bale being at least 3%, as is set forth in claims 1 and 6. Nor does Mabry explicitly disclose: that the void volume is 3% to 40%, as is set forth in claim 2; that the elastomer pieces have a planar form, as is set forth in claim 3; that the elastomer composite pieces are in the form of short strips that are 40-60mm long, 5-10mm wide and 5-10 mm thick, as is set forth in claim 5; that the pieces are in the form of pellets having a diameter of 5-10mm and a length of 10-30mm, as is set forth in claims 6 and 7; or a Mooney viscosity at least 100, as is set forth in claim 8.

The response dated 08 March 2006 states: "Examiner asserts that the inventive concept of decreasing the density of a block so as to ease a subsequent comminuting step is well-known", and, "Examiner asserts that it is well-known to choose the size and

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shape of particles compressed into a bale or block so as to achieve a desired compaction with respect to void volume.”

It is noted that the Applicant has properly contested the Examiner’s assertions made through Official Notice.

It is submitted that there is sufficient evidence to support the Examiner’s Official Notice assertions.

Firstly, Hale US 2,215,435 sets forth in column 1, that in regard to rubber bales “if the milling operations could be reduced or made easier, the savings in labor, power consumption and depreciation on heavy mill equipment would be corresponding reduced.” From this reference it can be seen that the problems associated with comminuting, pulverizing rubber bales have been known for at least 65 yrs.

Secondly, Jorgensen, Jr. et al. US 4,207,218 sets forth that friable rubber bales offer an excellent balance between the economics of shipping and storage and low energy consumption upon use. To this end, Jorgensen describes the steps of processing the rubber into solid particulate form of a size from about .1mm to 15mm (col. 2, line 6-10) through techniques such as grinding (col. 2, lines 15 and 16). Subsequent, to this process, the particles are compacted into bales where it was recognized that “when compaction reaches a point where the bale has over two times the bulk density of the original particulate rubber, the bale ceases to be friable (col. 6, lines 7-10). Jorgensen provides two examples in cols. 5 and 6 showing different particle sizes pressures and resulting bale densities. Clearly, Jorgensen recognizes what the Examiner has previously asserted, that being the relationship of bale density with ease

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of comminuting or pulverizing the bale, in addition to the relationship of particle size to the resulting bale density.

Although Jorgensen does not explicitly set forth void volume, and instead focuses on "density", it is recognized that as bale density increases as void volume decreases. Jorgensen focuses on bale density as opposed to void volume, but the two are intertwined (and as is recognized in the title of the present application "Elastomer composite materials in *low density* forms and methods"). It is also noted that the void volumes set forth in the claims are not established in the application as being critical. From the teachings of Jorgensen alone, one of ordinary skill in the art would recognize that bale density is a variable to be optimized. Accordingly, it would have been obvious to one of ordinary skill in the art through routine experimentation to discover the optimum or workable ranges of bale density (void volume) so as to achieve a bale that is suitable for pulverization or comminution with minimal machine wear and minimal energy input.

Additionally, it is noted that no criticality of particle size is established in the application. It is further noted that the particle sizes set forth in Jorgensen (such as 15mm) overlap the sizes set forth in the claims. From the teachings of Jorgensen alone, one of ordinary skill in the art would similarly recognize that in the pursuit of a proper bale density, particle size is also a variable to be optimized. Accordingly, it would have been obvious to one of ordinary skill in the art through routine experimentation to discover the optimum or workable ranges of particle sizes so as to

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achieve a bale that is suitable for pulverization or comminution with minimal machine wear and minimal energy input.

Additionally, it is noted that no criticality of Mooney viscosity is established in the application. Mabry discloses in Table 10 Mooney viscosities of at least 100 as is claimed. Additionally, to the extent needed, Jorgensen discloses a Mooney viscosity of 80, which is slightly below that claimed in claim 8 (at least 100). However, here again, from the teachings of Jorgensen one of ordinary skill in the art would similarly recognize that in the pursuit of a proper bale density, Mooney viscosity is also a variable to be optimized. Accordingly, it would have been obvious to one of ordinary skill in the art through routine experimentation to discover the optimum or workable ranges of Mooney viscosity so as to achieve a bale that is suitable for pulverization or comminution with minimal machine wear and minimal energy input.

Finally, with respect to the shape of the bale particles set forth in the claims, the applicant has set forth three different shaped particles: planar, short strips, and pellets. On page 6 of the specification it is stated, "The elastomer composite pieces may be formed from other shapes as well." Accordingly, no criticality of the shape has been asserted, and instead the application explicitly sets forth that the shape of the particles is not critical as it relates to bale density. Accordingly, an assertion of criticality of the claimed shapes would be in stark contrast to what is set forth in the specification.

In situations such as this, changes of configuration are generally considered to be a matter of choice which a person of ordinary skill in the art would have found

obvious absent persuasive evidence that the particular configuration of the claimed shape is significant. See *In re Dailey*, as is set forth in the MPEP 2144.04 IV B.

In the Jorgensen reference, like the present application, the role of particle shape in bale density is not explicitly set forth as being significant. In particular, Jorgensen, like the present application, does not focus on a particular shape and instead mentions powder and crumb size, and that the rubber is processed into a particle form through various processes such as coagulation, spray drying and grinding (col. 2, lines 6-16). It could reasonably be stated that Jorgensen both implicitly and explicitly describes various particle shapes by his description of various particle producing processes that would necessarily result in different shaped particles. It is submitted that the particle shapes produced by the various processes set forth in Jorgensen would necessarily be consistent with the particle shapes claimed: planar, short strips and pellets. Jorgensen further implicitly sets forth that the different shaped particles produced in the various processes are all suitable to produce bales of the desired density so as to be easily comminuted or pulverized.

Although the Examiner has previously submitted that the role of particle shape in determining a final density of a compacted product is well known in many arts, such an assertion is not necessary to reject the present claims, nor is evidence necessary to support this assertion. The evidence gleaned from Jorgensen indicates that particle size, not shape is more important in achieving his objective of a low density bale that is easily comminuted or pulverized. And this evidence is completely consistent with the disclosure of the present application. Specifically, in both Jorgensen and the present

application the relative insignificance of particle shape in comparison to particle size is implicitly set forth with respect to achieving proper bale density.

Thirdly, although not explicitly needed to satisfy the Examiner's assertions, Lopez Serrano Ramos et al. US 6,646,028 and Chung et al. US 6,372,822 both disclose the post processing of extruded rubber crumb into particles of a smaller size than leave the extruder. The post processing is performed through milling or granulating processes prior to the baling of the crumb. Chung further discloses that "a looser bale may be preferred for use in a Banbury mixer or the like."

Finally, the Examiner's assertions made through Official Notice have been supported through the previously discussed teachings of Jorgensen. Accordingly, the rejection of all claims under Mabry and Examiner Official Notice, as is herein supported by Jorgensen, is made final. Additionally, all arguments have been responded to herein.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerrold Johnson whose telephone number is 571-272-7141. The examiner can normally be reached on 9:30 to 6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mickey Yu can be reached on 571-272-4562. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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